# *DOE/NETL and EPRI Sponsored Mercury Measurements Workshop*

**July 13, 2004**

# Ontario Hydro Mercury Speciation Method

# Ontario Hydro
# Mercury Speciation Method

## ASTM D6784-02

**Standard Test Method for Elemental, Oxidized, Particle-Bound, and Total Mercury in Flue Gas Generated from Coal-Fired Stationary Sources (Ontario Hydro Method)**

**http://www.astm.org**

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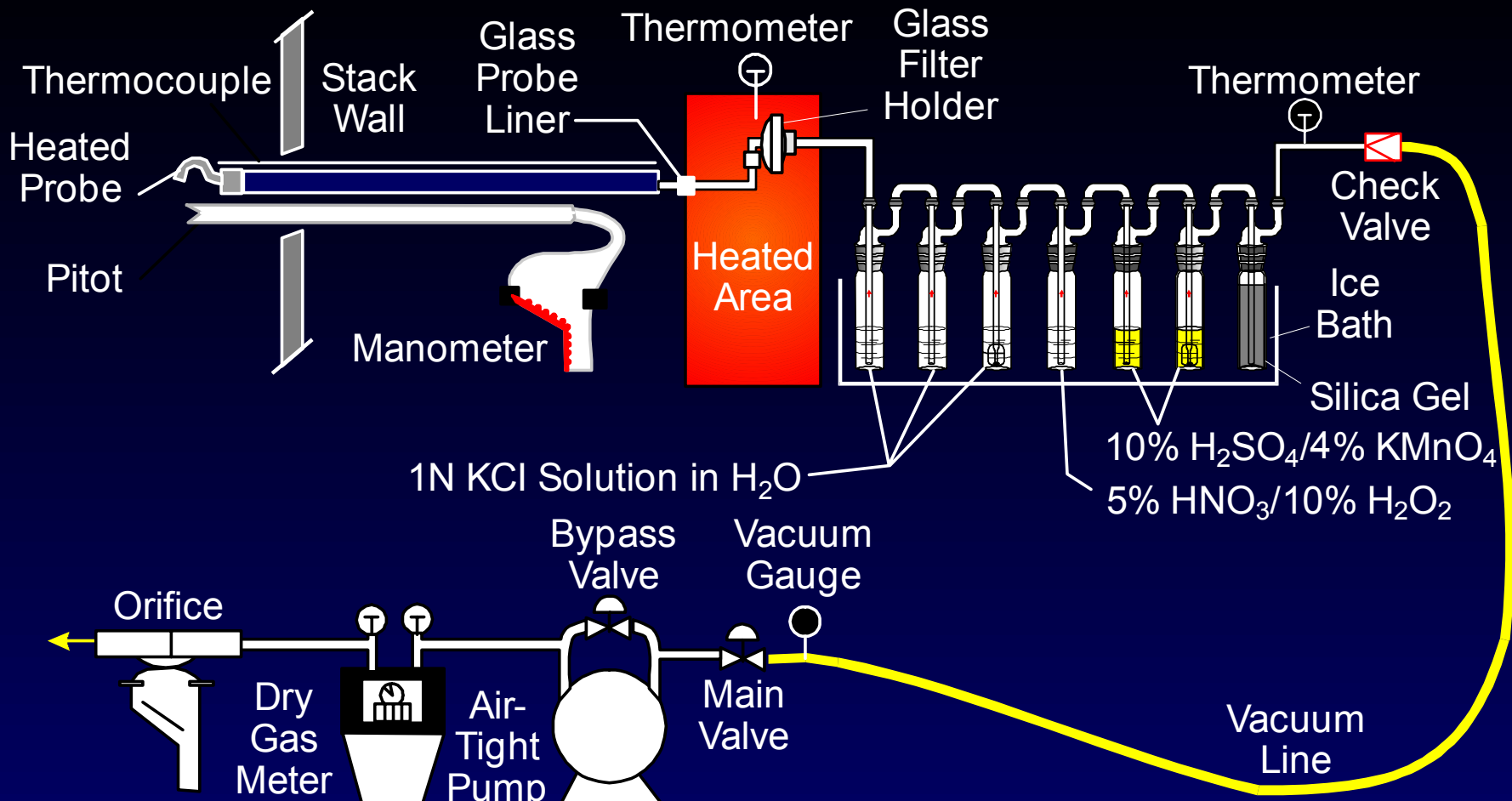
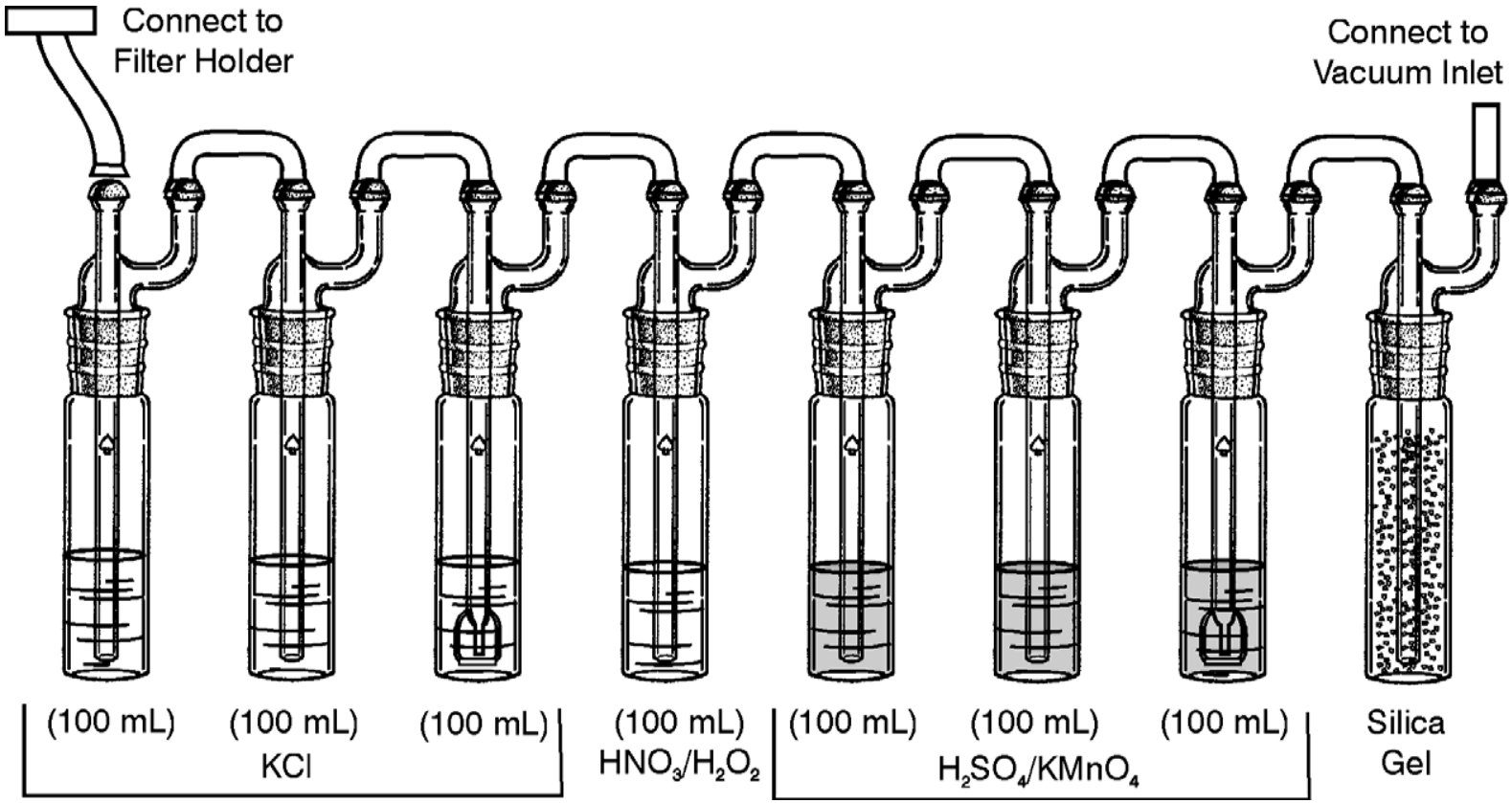
# *Schematic of the Ontario Hydro Impinger Train*



# Ontario Hydro Impinger Train

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# Wet-Chemistry Methods for Measuring Mercury in Flue Gas

- Wet-chemistry methods
  - U.S. Environmental Protection Agency (EPA) Method 101A – measures only total mercury.
  - EPA Method 29 – measures all trace elements.
  - Ontario Hydro mercury speciation method allows for measurement of total, particulate-bound, elemental, and speciated mercury.
- Provide good results with a high level of sensitivity, $<0.5\ \mu g/Nm^3$

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# Wet-Chemistry Methods for Measuring Mercury in Flue Gas

- But …
  - A high level of quality assurance/quality control (QA/QC) and well-trained personnel required
  - 2-week or more turnaround time for results
  - No real-time data
  - Expensive

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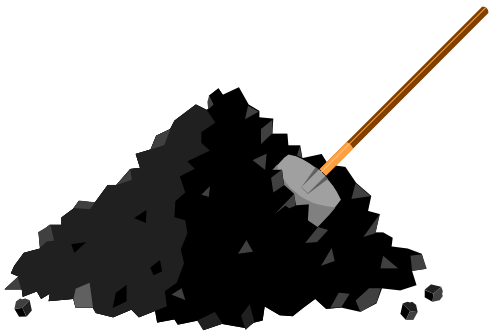
# Sample History

Collection ➡ Storage ➡ Preparation ➡ Analysis



**Errors can be introduced at any stage.**

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# Issues Using Wet-Chemistry Methods for Measuring Mercury in Flue Gas

- QA/QC
  - Upfront planning
  - Blanks and spikes
- Particulate issues (high dust measurements)
  - Hg adsorption or changes in Hg speciation
  - Filter vs. other particulate separation techniques
- Wet stacks
- Sample turn around time.
- Sample preparation and analysis.
- Other